PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P1106PC00	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/NO2004/000185	International filing date *(day/month/year)* 23.06.2004	Priority date *(day/month/year)* 23.06.2003
International Patent Classification (IPC) or national classification and IPC E04C5/07		
Applicant AS SPILKA INDUSTRI et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 3 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:
   - ☒ Box No. I Basis of the opinion
   - ☐ Box No. II Priority
   - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - ☒ Box No. IV Lack of unity of invention
   - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - ☐ Box No. VI Certain documents cited
   - ☐ Box No. VII Certain defects in the international application
   - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
04.01.2005	18.03.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Cleuziou, Y Telephone No. +49 89 2399-2492

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/NO2004/000185

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages	
1-6	as published
Claims, Numbers	
1-12	received on 23.02.2005 with letter of 21.02.2005
Drawings, Sheets	
1/2-2/2	as published

   ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/NO2004/000185

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
   - ☒ restricted the claims.
   - ☐ paid additional fees.
   - ☐ paid additional fees under protest.
   - ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

   ☐ complied with.

   ☒ not complied with for the following reasons:

   see separate sheet

4. Consequently, this report has been established in respect of the following parts of the international application:

   ☒ all parts.

   ☐ the parts relating to claims Nos. .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-12
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-12
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations (Rule 70.7):

   see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:
   D1: EP 0 308 237 A
   D2: US 4 620 401 A

2. Document D1, which was originally cited in the description, is considered to represent the most relevant state of the art. Document D1 discloses (cf. the whole document and in particular the abstract and figure 8) a method and the related device for fabrication of a reinforcing blank or rod made in a composite material and having different sections.

   Independent claims 1 and 9 differs from D1 in that the blank is a straight rod and not a loop as in the present application.

   The subject-matter of claims 1 and 9 is therefore new (Article 33(2) PCT).

3. The problem to be solved by the present invention may be regarded as obtaining a rod of the same nature as in D1, or as in D2, which is also a relevant document of the state of the art (cf. the abstract and the figures), which is closed and approximately circular and not straight.

   The solution to this problem proposed in claims 1 and 9 of the present application is considered as involving an inventive step (Article 33(3) PCT) because no cited document deal with this specific problem. Consequently, the problem posed is new. Document D2 (cf. the passages cited in the search report), only concerns a straight rod too. The claimed solution to the problem is inventive since no hint can be found in the cited state of the art which would suggests it in any way.

4. Claims 2-8 and 10-12 are dependent on claims 1 or 9 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item IV

Lack of unity of invention

The reeling of the moistened fibre thread to a circular blank bundle is the technical feature of independent claim 1 which makes a contribution over this prior art (D1 or D2) and can be considered as a special technical feature within the meaning of Rule 13.2 PCT.

However, claim 10 is more general and does not mention the **moistened** fibre thread and consequently relates to the mere forming of a circular bundle of any kind of fibre thread.

Consequently, the device according to independent claim 10 could possibly be used in the reeling step of independent claim 1 because the claimed device does not use a moistened fibre thread. Therefore, claim 10 does not concern a device specifically designed for a product according to claim 1.

In conclusion, claims 9-12 are not linked by common or corresponding special technical features with claims 1-8 and define two different inventions not linked by a single general inventive concept.

The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

C L A I M S

1. Method for fabrication of a reinforcing blank in a composite material, where the reinforcing blank is being fabricated of longitudinal fibres and a sheathing layer of fibre or foil, or other suitable material, and in where fibre thread is being moistened with a binding agent, c h a r a c t e r i s e d by the following steps:

to reel the moistened fibre thread onto a rotational plate (12) comprising a number of holding means (14) for fibre threads, to a blank bundle in a closed, approximately circular shape, comprising a layer of desired thickness of longitudinal, parallel fibres, whereby all longitudinal, parallel fibres in the layer achieve approximately equal axial tightening, and

to envelope an outer layer of fibre threads, and/or foil/band, around the layer of longitudinal fibres, and

to finish the fabrication of the prepared blank in a second forming process.

2. Method in accordance with claim 1, c h a r a c t e r i s e d in that the enveloping comprises winding on, in an in itself known way, an outer layer of fibre threads, and/or foil/band, in a helically form around the layer of longitudinal fibres.

3. Method in accordance with claim 1, c h a r a c t e r i s e d in that the enveloping comprises knitting on, in an in itself known way, an outer layer of fibre threads, and/or foil/band, around the layer of longitudinal threads.

4. Method in accordance with claim 2 or 3, c h a r a c t e r i s e d in that the final forming of the reeled bundle is carried out by tightening in a gig to the required shape and by subsequent heating to the curing temperature of the binding agent.

5. Method in accordance with claim 4, c h a r a c t e r i s e d in that the finally formed blank can be divided in two or more parts.

6. Method in accordance with claims 2 or 3, c h a r a c t e r i s e d in that the fibre thread which is used is selected from a group including glass, basalt, carbon, thermoplastic or the like.

7. Method in accordance with claims 2 or 3, c h a r a c t e r i s e d in that thermoset plastic is used as a binding agent.

8. Method in accordance with claims 2 or 3, c h a r a c t e r i s e d in that thermoplastic is used as a binding agent.

9. Device (10) for reeling and winding of fibre thread for fabrication of a reinforcing blank in a composite material, c h a r a c t e r i s e d by:

a rotational plate (12) comprising a number of holding means (14) for fibre threads, where the holding means (14) are arranged mutually spaced apart adjacent to the outer edge of the plate (12), for reeling of a blank with a closed, approximately circular shape, comprising a layer of desired thickness of longitudinal, parallel fibres, whereby all longitudinal, parallel fibres in the layer achieve approximately equal axial tightening, and

at least one winding appliance (18,20) arranged to wind fibre thread, and/or foil or other suitable material in a helically form round the longitudinal fibre threads.

10. Device in accordance with claim 9, c h a r a c t e r i s e d i n that the holding means (14) consists of wheels comprising suitable grooves for the fibre threads.

11. Device in accordance with claim 9, c h a r a c t e r i s e d i n that the device (10) comprises at least one knitting appliance arranged to knit fibre thread, and/or foil, or other suitable material around the longitudinal fibre threads.

12. Device in accordance with claim 9, c h a r a c t e r i s e d i n that the device (10) comprises a tightening appliance (16) arranged to tighten and to regulate the supply of the fibre thread to the holding means (14) of the rotational plate (12).